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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/575,552	05/22/2000	Jaime L. Prieto Jr.	22-0099	1282

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EXAMINER

JONES, PRENELL P

ART UNIT PAPER NUMBER

2667

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> <u>09/575,552</u>	<b>Applicant(s)</b> PRIETO JR. ET AL.	
	<b>Examiner</b> Prenell P Jones	<b>Art Unit</b> 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 September 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4 and 11-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 11, 12 is/are allowed.
- 6) ☒ Claim(s) 13, 14, 16-19 and 21 is/are rejected.
- 7) ☐ Claim(s) 15 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

1. Applicant's arguments with respect to claims 4 and 11-21 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 13, 14, 16-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman et al in view of Silberschatz et al.

Regarding claims 13, 14, 16-18 and 21, Zimmerman discloses (Abstract, Figs. 12-14B, col. 7, line 34-45, col. 9, line 12-17, col. 21, line 53 thru col. 22, line 57, col. 23, line 2-3,) self-correcting bandwidth allocation in a wireless communication system wherein the architecture includes

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base station MAC scheduler that allocates bandwidth for the uplink and downlink dynamically, whereby the MAC scheduler maintains a set of queues for each physical channel that it serves, (col. 31, line 38-45) present invention can be implemented in a satellite communication system, (col. 15, line 49-58, col. 26, line 35-38, line 60-65,) bandwidth added dynamically, (col. 9, line 13-26, col. 21, line 53 thru col. 24, line 58, col. 26, line 35-65, col. 27, line 24 thru col. 28, line 7) MAC scheduler/base station maps and allocates bandwidth dynamically with respect to bit rate priority using various QoS techniques such as fair-weighted queuing and round robin queuing that depend on varied traffic characteristics (parameters), and (col. 6, line 30-40) aggregate bandwidth (statistical/measured) is used by the base station reset (update) records to reflect current bandwidth requirements, and (Fig. 14a, col. 27, line 24 thru col. 28, line 45) allocation of bandwidth based on data arrival. However, Zimmerman is silent on changing bandwidth of a queue while the queue is buffering packets. In analogous art, Silberschatz discloses (Abstract, col. 2, line 50 thru col. 4, line 57, managing a buffer pool containing multiple queues wherein queues are buffered and packets are dropped with respect to packet data flow, link scheduler as part of a gateway (base station) to increase system efficiency, a fair drop buffer management is used in connection with a per-flow fair link scheduling algorithm which is implemented in a gateway/scheduler, buffering based on link speed, (col. 5, line 50-67) buffer share changes over time with arrivals and departures of packets, as flows backlog and reduce their bandwidth, (col. 7, line 22-36) flows participate in bandwidth reduction (changing bandwidth) which occurs when signals (packet drop/packets buffered) are sent repeatedly, (col. 2, line 50-65, col. 5, line 50-57) a buffer management method which includes managing a buffer pool containing a plurality of queues, the buffer share of node changes over time with the arrivals and departures of packet flow, as flows backlog and reduce bandwidth usage, and as excess buffer capacity unused by one queue is relocated. Therefore, it would have been obvious to one of ordinary skill in the art

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at the time of the invention to be motivated to implement changing bandwidth of a queue while a queue is being buffered as taught by Silberschatz while communicating data between transmitting node and receiving node (uplink-downlink) with the teachings of Zimmerman for the purpose utilizing bandwidth efficiently as well as minimizing contention in queues.

Regarding claims 19, as indicated above, Zimmerman discloses (Abstract, Figs. 12-14B, col. 7, line 34-45, col. 9, line 12-17, col. 21, line 53 thru col. 22, line 57, col. 23, line 2-3,) self-correcting bandwidth allocation in a wireless communication system wherein the architecture includes base station MAC scheduler that allocates bandwidth for the uplink and downlink dynamically, whereby the MAC scheduler maintains a set of queues for each physical channel that it serves, (col. 31, line 38-45) present invention can be implemented in a satellite communication system, (col. 15, line 49-58, col. 26, line 35-38, line 60-65,) bandwidth added dynamically, (col. 9, line 13-26, col. 21, line 53 thru col. 24, line 58, col. 26, line 35-65, col. 27, line 24 thru col. 28, line 7) MAC scheduler/base station maps and allocates bandwidth dynamically with respect to bit rate priority using various QoS techniques such as fair-weighted queuing and round robin queuing that depend on varied traffic characteristics (parameters), and (col. 6, line 30-40) aggregate bandwidth (statistical/measured) is used by the base station reset (update) records to reflect current bandwidth requirements, and (Fig. 14a, col. 27, line 24 thru col. 28, line 45) allocation of bandwidth based on data arrival. Zimmerman further discloses (col. 9, line 13-53) bandwidth requirements allocated with respect to QoS and high priority class (CBR).

***Allowable Subject Matter***

1. Claims 4, 11 and 12 are allowed over prior art.

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2. Claims 15 and 20, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. The following is an examiner's statement for indicating allowable subject matter: Applicant has canceled previously rejected claims 1-3 and 5-10. As indicated in the previous office action claims 4, 11 and 12 contain allowable subject matter. Applicant has amended claims 4, 11 and 12 to read as independent claims.

Although the cited art, Zimmerman et al and Silberschatz et al, discloses storing packets in priority class queues, communication in a satellite system that includes, communication in the uplink/downlink directions, upstream data/downstream data, downlink/uplink flow scheduler, resource allocator allocates resource bandwidth, data packets placed in priority class queues based on quality of service requirements, prioritization and scheduling of bandwidth is performed in the uplink path/channel, scheduling functions/resource allocation placed at the base station, scheduling in real-time, scheduling takes in account resource requirements, service level agreement, QOS mechanism monitors/optimizes traffic parameters, IP streams of data, appropriate QOS parameters are assigned to data streams based on priority, monitoring services (QOS), real-time transport protocol (RTP) provides mandatory monitoring, temporarily store packets, lookup table for QoS requirements/reservation request (service schedule lookup table), fair queuing algorithm used to calculate guaranteed queuing resources based on bandwidth availability they fail to teach/suggest, a look-up table storing a master frame allocating bandwidth to at least one queue, memory storing a packet service schedule identifying an order in which data packets pass over the downlink, packet service schedule based on bandwidth allocation calculated by scheduler, measuring a phase of each stream stored in priority class queue as being indicative of an amount of the time lapsed since a data

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packet from a particular priority-class queue was output to the downlink channel, and switch for switching packets from each uplink to a unique queue based on priority classes of packets.

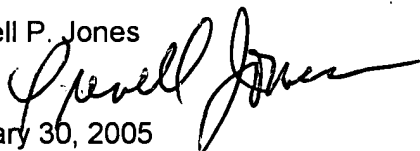
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prenell P. Jones whose telephone number is 571-272-3180. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Prenell P. Jones

January 30, 2005

A handwritten signature in black ink, appearing to read "Prenell Jones", written over the typed name and date.